

Triconex 3708E

Isolated Thermocouple Input Module

Manufacturer	Triconex
Model / order number	3708E
Product identification	Isolated Thermocouple Input Module
System / family context	Tricon Systems

Verified scope

16 differential isolated TMR thermocouple inputs support types J, K, T and E. Original pages include the front panel, 50 ms update specification and cold-junction information.

Engineering checks before replacement

- Preserve thermocouple type, polarity and burnout direction.
- Inspect the cold-junction environment and CJ fault indication.
- Separate common-mode and protection limits from measurement range.
- Prove the complete sensor loop with approved temperature tests.

Original manufacturer source reference

Planning and Installation Guide for Tricon v9-v11 Systems, 9700077-019, June 2014. Original PDF pages 177, 178, 179, 180.

Open manufacturer document (hosted copy)

This cover is an independent Sales PLC reference, not a manufacturer-issued datasheet. The following manufacturer pages retain their original text, layout and page numbering.

Request model verification or a quotation

info@amikon.cn | +86 18020776786

www.salesplcauto.com

16-Point Isolated Thermocouple Modules

This figure is a simplified schematic for Model 3708E, which is an isolated Thermocouple Input Module.

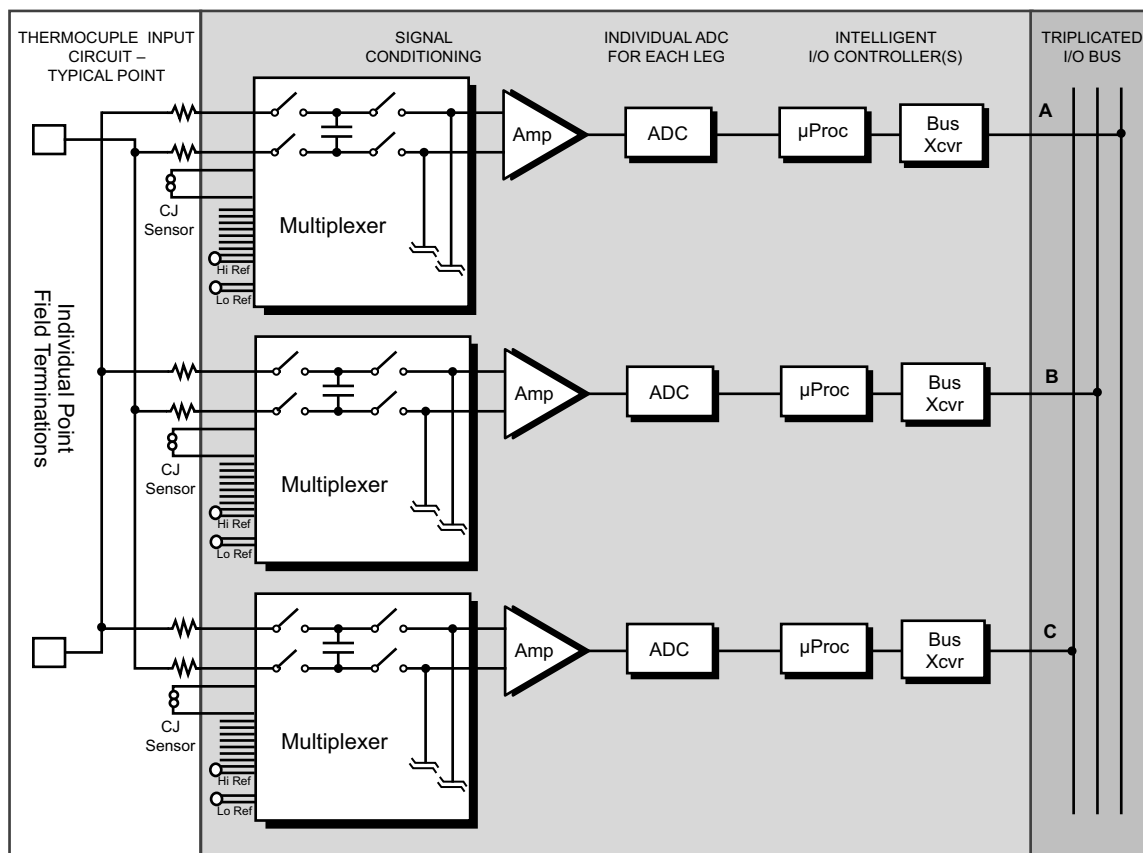


Figure 65 3708E Simplified Schematic

This figure shows the front panel of Model 3708E.

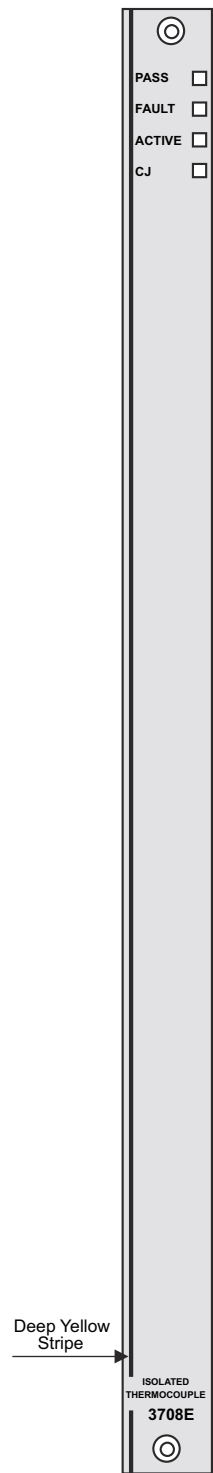


Figure 66 3708E Front Panel

3708E Specifications

This table lists the specifications for Model 3708E, which is an isolated TMR Thermocouple Input Module.



If the common mode voltage range of a channel is exceeded, Invensys does not guarantee proper operation of the module and accuracy of other channels.



If the input readings differ by a minimum of 0.5 percent of full scale and continue for a minimum period of 256 input samples, the probability of a fault increases.

Table 60 3708E Thermocouple Input Specifications

Feature	Specification
Color code	Deep yellow
Thermocouple types supported	J, K, T, E
Open detect	Upscale, Downscale, (configure in TriStation 1131)
Number of input signals	16 differential, isolated
Input update rate	50 ms maximum
Accuracy of thermocouple types and temperature ranges supported	See table, Table 61 Accuracy of Model 3708E Thermocouple Types (page 179).
Input resistance (load)	30 M Ω (DC) minimum
Input point protection	110 VAC continuous without damage
Noise rejection: Common mode	-100 dB @ DC minimum -90 dB @ 60 Hz minimum
Noise rejection: Normal mode	-3 dB @ 8 Hz typical -17 dB @ 60 Hz typical
Common mode range (See above Warning)	± 200 VDC maximum (channel-to-channel or channel-to-ground)
Channel-to-channel isolation	20 k Ω , typical
Reference-junction compensation range	32° to 140° F (0° to 60° C)
Status indicator: Module status	Pass, Fault, Active
Status indicator: Cold Junction sensor status	CJ (On = CJ Fault)
Input diagnostic fault coverage:	
Minimum input change	0.5% of full scale
Input change sample period	50 ms
Minimum period of mis-compares	256 samples

Table 60 3708E Thermocouple Input Specifications (*continued*)

Feature	Specification
Logic power	< 15 watts

Note For information about compliance with IEC 61508, Parts 1-7:2010, see TÜV Rheinland on page 22.

3708E Accuracy

Accuracy specifications account for errors related to reference-junction compensation but do not account for errors caused by temperature gradients between the temperature transducers and thermocouple terminations. The customer is responsible for maintaining a uniform temperature across the Thermocouple Field Termination Module.

Table 61 Accuracy of Model 3708E Thermocouple Types

TC Type	Temperature Range	Accuracy @ 32° to 140° F (0° to 60° C)	
		Ta=77° F (25° C)	Ta=32° to 140° F (0-60° C)
		Typical	Maximum
J	-238° to 32° F (-150° to 0° C)	± 3.0° F (1.7° C)	± 9.0° F (5.0° C)
	>32° to 1400° F (0° to 760° C)		± 5.5° F (3.1° C)
K	-238° to 32° F (-150° to 0° C)	± 4.0° F (2.3° C)	± 8.0° F (4.5° C)
	>32° to 2284° F (0° to 1251.1° C)		± 7.0° F (3.9° C)
T	-250° to 32° F (-161° to 0° C)	± 3.0° F (1.7° C)	± 8.5° F (4.8° C)
	>32° to 752° F (0° to 400° C)		± 4.5° F (2.5° C)
E	-328° to 32° F (-200° to 0° C)	± 3.0° F (1.7° C)	± 8.0° F (4.5° C)
	>32° to 1830° F (0° to 999° C)		± 5.0° F (2.8° C)